

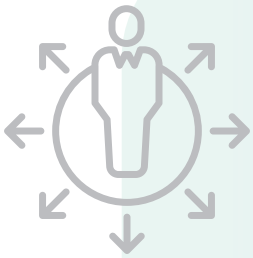
Lab design that drives lab performance

Cambridge University Hospitals NHS
NHS Foundation Trust

Think Lab. Think LTS

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Optimise processes, enhance workflow and quality and minimise operating costs with world-class lab design.



Challenge

Increased test volumes could compromise performance

Cambridge University Hospital Laboratory was housed in an old and highly fragmented building. The existing laboratory required a revamp, in order to increase test volumes without compromising laboratory performance and quality. The lab also needed the flexibility to accommodate future automation.



Approach

Process-driven lab design

LTS Health was involved in all aspects of the project from planning to consultation. LTS Health made use of the six stages in lab design, initially mapping optimised processes and matching infrastructure.



Results

100% increase in workload capacity

Cambridge University Hospital Laboratory saved 64% in facility rental costs, leading to an improved test-per-square-metre. They optimised workflow and increased functional areas by 100%. This was all achieved by aligning their infrastructure with their processes.

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Process-driven lab design

LTS Health assisted Cambridge University Hospital Laboratory to deal with increasing test demands and under-utilised functional areas. This will allow them to roll out future automation.

LTS Health was involved in all aspects of the initiative, from planning to consultation with all stakeholders. Specific responsibilities included:

Stakeholder

LTS Health consulted with all parties to plan the best approach. This project included mapping optimised processes during phase 1.

Future-proof laboratory layout

Revamping an old highly fragmented laboratory with many small rooms and pillars posed a challenge for future automation. With 20 years of experience in unparalleled laboratory design, LTS ensured:

- A process-driven designs that supports safety and productivity
- Minimised operating costs, effective work flows and enhanced staff productivity
- A design that exceeds best practice, and delivers quality, comfort and energy efficiency
- Facilities that are environmentally sustainable

3D and VR modelling

Using modelling technology, LTS Health produced a view of the revamp to the Cambridge University Hospital Laboratory before any construction commenced.





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Going beyond the client's needs.

49.31%
Increase in bench space

53%
Reduction in the number of specimen pathways from receiving to analysis

30%
Reduction in the number of duplicated analytical activities

100%
Functional area work-flow increase

Checklist	
Accommodate fourth Kiestra incubator module	✓
Accommodate Papworth volumes and annual increases	✓
Strategy when planning for future growth – flexibility	✓
Research, development and training facilities	✓
Infectious diseases hub	✓
Accommodate academic chair	✓
Consolidated management suite	✓
Centralised reception consolidated on level 4	✓
Staff Utilisation have been aligned with task requirement	✓
Improve space utilisation	✓
Turnaround time	✓
Effectiveness	✓
Housekeeping	✓
Financial performance	✓
Isolate Mycology from other functions to prevent cross-contamination	✓

The Results

The development of a centralised reception area resulted in the continuous flow of specimens into the laboratory.

Functional Area Consolidation

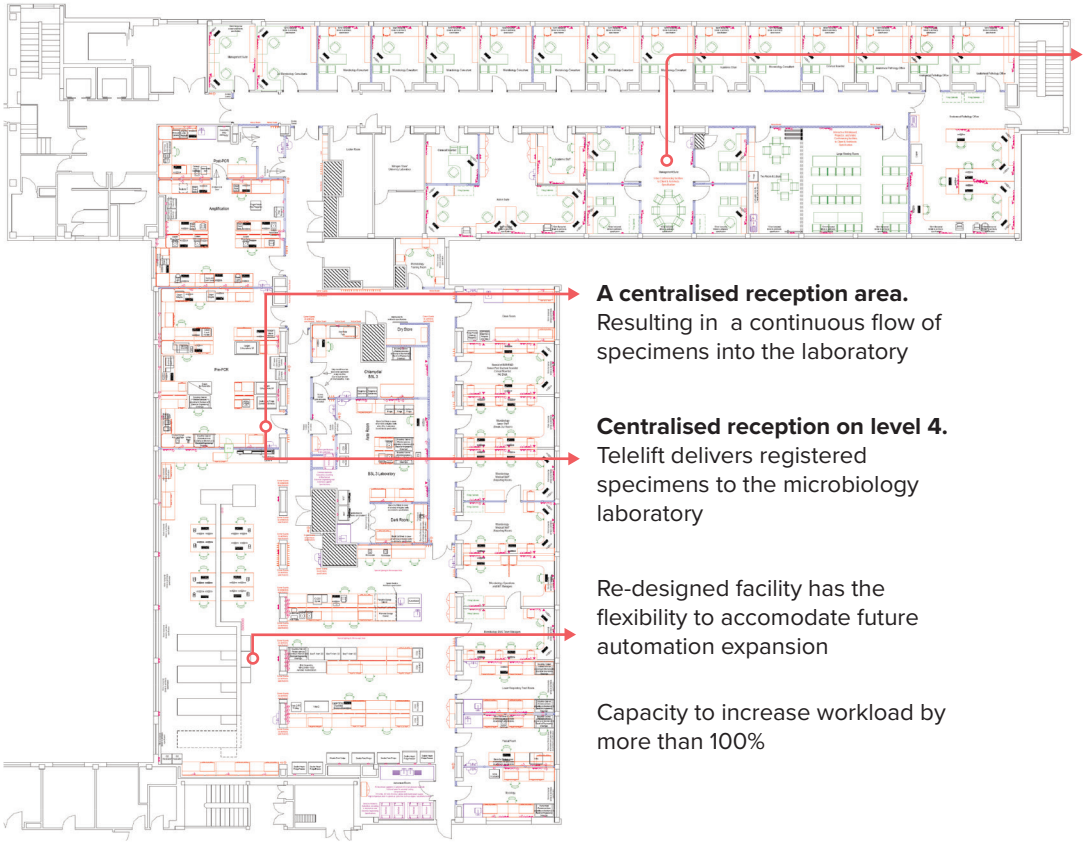
The consolidation of functional areas improved space utilisation. All the required functional areas have been accommodated within the available footprint. Staff qualifications have been aligned with relevant task requirements.

Automation

By removing unnecessary walls and ensuring a process-driven lab design, automation is now possible.

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Process-driven design – Cambridge University Hospital Laboratory



Functions not related to microbiology removed from core envelope

A centralised reception area. Resulting in a continuous flow of specimens into the laboratory

Centralised reception on level 4. Telelift delivers registered specimens to the microbiology laboratory

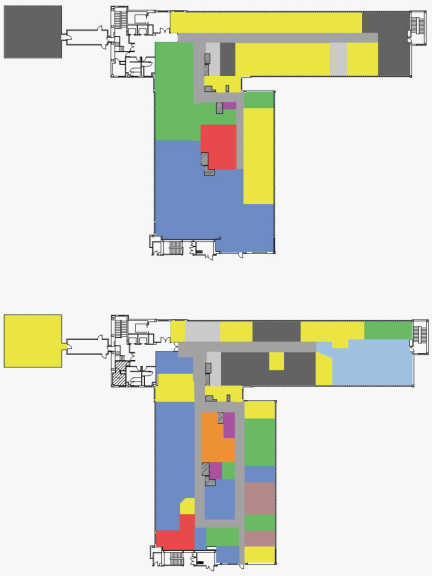
Re-designed facility has the flexibility to accomodate future automation expansion

Capacity to increase workload by more than 100%

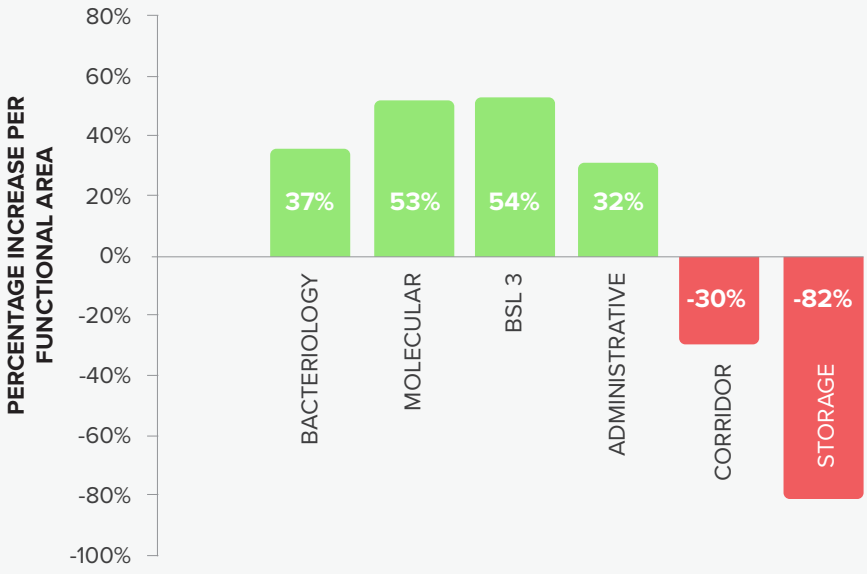
Consolidated functional areas lead to improved space utilisation

All required functional areas are accommodated within the available footprint – no need for additional space

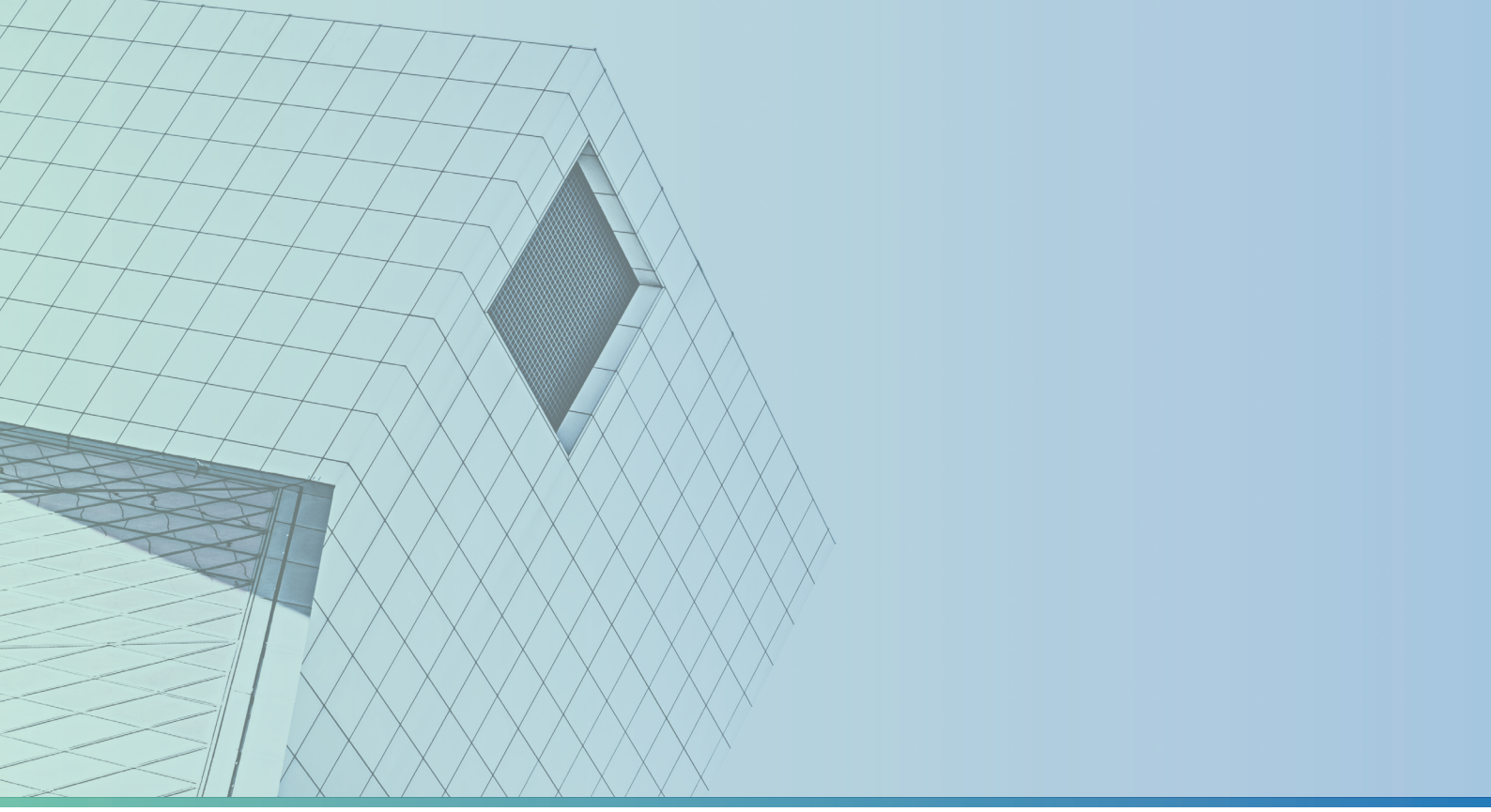
Elimination of fragmented functional areas



All required functional areas accommodated within the available footprint – no need for additional space



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